

DUG ROCKIES: POWDER RIVER BASIN PROJECTS STRONG OUTLOOK

Operators continue drilling in one of the most attractive oil plays in the Rocky Mountain region.

BY FAIZA RIZVI, E&P
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Investor**

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Publishing LLP
1616 S. Voss Rd.
Suite 1000
Houston, TX 77057
(713) 260-6400

The empty stretch of prairie that turned into a bustling spot for unconventional drilling—the Powder River Basin—was the focus of the session during DUG Rockies Conference and Exhibition on May 15. Leaders of exploration and production companies addressed a range of topics from geological composition to future developments of the region.

Industry reports confirm that although the most recent downturn in prices had slowed Powder's development, ever since prices have improved, key players have been racing for control especially in the southern flank of the play where more than two out of every three wells drilled are horizontal completions.

"There has been considerable drilling activity in the Powder River Basin with 23 drilling rigs in operation during 2018," said Joe DeDominic, president and COO of Anschutz Exploration Corporation (AEC).

He explained that in the upper cretaceous, 252 horizontal wells have been drilled in the Niobrara formation since 2010, while 524 wells have been drilled in the Frontier rock formation during that period.

In 2018, EOG Resources completed two Mowry wells during the second quarter, and the IP 30 averaged almost 2,200 barrels of oil equivalent per day (boe/d). Moreover, during the fourth quarter, EOG reported drilling two more wells where the IP30 equaled 2,050 boe/d.

Key Developments

"Ballard Petroleum is targeting Parkman, Shannon, Turner and Frontier sand plays for horizontal drilling," said Dave Ballard, president of Ballard Petroleum Holdings. "We are also targeting Niobrara and Mowry shale plays which are a great source of oil in this area."

Referring to the tight sand plays as the "low hanging fruit", Ballard said his company is making drilling progress in the area while driving down costs. In 2018, production on Ballard's acreage exceeded 22 MMbbl.

Ballard pointed out that vertical pilot holes are initially needed to target lateral placement in the Turner formation.

He added that area has a 70-ft gross pay interval with four depositional cycles recognized within the Turner pay. On the other hand, the Parkman formation has up to 50-ft gross pay interval with lateral placement in transgressive system tracts.

Ballard explained that advancements in technology have greatly reduced drill times. Factors such as drill bit enhancements, faster and stronger motors and usage of rotary steerable system for Turner intermediates and Parkman laterals have contributed to reduction in drill times. Moreover, cost efficiencies from drilling and completion improvements allowed Ballard Petroleum to achieve a 40% reduction in Turner and Parkman costs since 2014.

Looking Forward

AEC plans to drill and complete 28 wells this year, said DeDominic. He explained that the company will focus on delineation and spacing tests in the first half of the year, while well developments will be carried out during the second half. He added that the company forecasts a net production of 18,000 boe/d during the first half of 2020.

AEC is building water handling facilities in the 1.5-million-acre, 5,000-well oil and gas project in the Converse County. These facilities will bring down the cost of recycled water from \$4.50/bbl to \$1.50/bbl with cost savings of approximately \$300,000 per well. The company is also involved in designing and planning centralized production facilities for the project, that will result in savings of approximately \$400,000 per well.

"The Powder River Basin is a strong, emerging basin and we're very pleased to operate here," said DeDominic. The Niobrara and Mowry plays are in the appraisal phase, where spacing is being defined while refining economic limits. On the other hand, the Turner formation is already in the development phase.

DeDominic also pointed out that as the basin moves into full scale development mode, the company will focus on its learning curve, optimized completions and infrastructure expansion. □

